# *CONSULTANT'S CORNER*

## APPROACH TO THE ACUTE RED EYE PATIENT

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*The acute care of an eye disorder is occasionally the subject of a malpractice claim but more often becomes the nexus of other interaction between law and medicine, e.g., personal injury or workers compensation claims. A practicing Board certified ophthalmologist, who is also a Diplomate of the American Board of Pathology, addresses a common yet problematic eye condition that periodically challenges every primary care provider.*

One of the most common ocular complaints encountered by non-ophthalmologists is the acute red eye. Fortunately, the patient is usually experiencing mild ocular inflammation related to a superficial problem such as a conjunctivitis, corneal abrasion, or foreign body. All primary care and emergency medicine providers should be familiar with those techniques involved in performing a basic screening eye examination. The goals of the health care provider who is not an ophthalmologist are to correctly diagnose and treat lesser problems, while identifying the more serious conditions that can threaten vision. An acceptable baseline eye exam does not require $200,000 worth of exotic equipment, demand a laser, or command fluency in those indecipherable abbreviations used by ophthalmologists.

In the military health care system, most physicians will be provided the opportunity to evaluate red eye patients. This article offers practical guidance in the evaluation, diagnosis and management of the acute red eye patient. It is not meant to be an exhaustive treatment of common eye disorders.[1] The information presented is intended to help clinicians identify key elements of a good emergency eye exam and emphasizes common problem areas and preventable errors.

Ophthalmology residents are initially taught three basic rules for a good eye examination: visual acuity, visual acuity, and visual acuity. If you recall anything from this article remember this: ***Always measure the patient's visual acuity and always document visual acuity in the medical record***. Some might feel offended by this simple advice - eyes, eye symptoms, visual acuity - it's automatic, right? One wishes it were, but all too often patients with eye complaints are evaluated and treated with no recorded visual acuity (even in ophthalmology clinics!).

No single piece of information from an eye examination is more valuable than visual acuity. Neglecting to record the vision creates two kinds of problems, clinical and legal. First, without a recorded visual acuity there is no clinical baseline against which to measure vision on follow-up. Secondly, patients may claim that the initial vision was anywhere between 20/20 and ***total blindness***. I have seen multiple imaginative permutations of this assertion, to include long-standing NLP (no light perception) patients and their attorneys who insist that astronaut-quality vision was enjoyed until the moment of arrival at the emergency room with a red eye. Similarly, years ago I was deposed during a civilian employment compensation case in which the individual claimed a blinding job site injury, until it was revealed that records from prior military service confirmed the presence of low vision from childhood due to strabismus. Use your imagination.

Having belabored that point, I offer a few practical tips about measuring vision. If the patient normally wears spectacles to drive, they should be worn when vision is tested. If the experience of ophthalmologists holds true, the spectacles will have been left in the car. Ask that they be retrieved. Without glasses, visual acuity can be tested with a pinhole occluder or an index card fenestrated with multiple small holes. Measure one eye at a time, right eye first by convention. Note in the chart if the patient was using the full spectacle correction, a pinhole, or no correction.

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A 20 foot lane with an official Snellen (Big E) chart is not necessary to document vision. Improvised charts include clocks, newspaper headlines, or posted signs - but be careful to jot down the height of the letters and the distance from which they were visible. Reading vision (magazines, telephone books) at 14 inches can be an effective substitute, as long as you remember that patients over age 40 will likely need reading glasses for regular print at that distance. For severe visual loss, rely on finger counting and hand waving. Do not restrict your attempts to measure vision to cooperative, able-bodied, easily evaluated adults. Bedridden patients, the illiterate, those who speak a language other than English, and children, including infants, should undergo vision testing.

The acute red eye history can be reduced to a few questions, for example, "Are you having the problem in one or both eyes?" or "What were you doing when you first noticed the symptoms?" Discriminate between eye **pain** (i.e., that caused by acute glaucoma, uveitis, corneal abrasion, episcleritis), **discomfort** (dry eye, foreign body), **discharge** (conjunctivitis), or an asymptomatic **injected globe** (subconjunctival hemorrhage). Pertinent facts that deserve notation in the record include prior eye conditions and treatments, ocular medications, family eye history, recent trauma, and the patient's general medical condition. Do not forget to ask about contact lenses. Contact lens overwear is a very common and easily overlooked diagnosis. [Ancient Ophthalmology Proverb - ***If you do not look, you will never see.***]

Once the visual acuity is measured, perform an external, gadget-free examination. Symmetry is fundamental. Differences between eyelid position, pupil size and reactivity, corneal clarity, iris color, and extraocular motility can signal very serious conditions.

Palpate for preauricular and cervical adenopathy; they frequently implicate nonbacterial infectious conjunctivitis. Evert the lower eyelids to examine the tarsal conjunctiva. Allergic conjunctivitis (usually bilateral) often produces flat cobblestone papillae, whereas a viral process (unilateral or markedly asymmetric) yields dome-shaped conjunctival follicles. True bacterial conjunctivitis (frequently bilateral) produces a copious, thick, purulent discharge, while other pathogens cause more watery or stringy exudates. Eversion of the upper eyelid is easily learned and essential in searching for foreign bodies.

As you jot down your findings, avoid "ophthojargon". You are not auditioning for a residency in eye surgery, and there can be minefields. Did you mean Hutchinson's sign, Hutchinson's triad, or Hutchinson's pupil? More than once I have discovered PERRLA (pupils equally round and reactive to light and accommodation) decorating medical record of a monocular patient. Could there be a faster way to undermine the credibility of your written observations? When something appears normal, write "normal".

Episodes of acute glaucoma are fairly straightforward. First of all, the patients are quite ill. As a consequence of their marked rise in intraocular pressure, many have vomited while waiting to be evaluated. Penlight examination often discloses a grey or cloudy cornea and a mid-dilated pupil that reacts sluggishly. Finger palpation to assess intraocular pressure is helpful only in the most severe cases. An easily used, handheld tonometer is preferable.

Most patients complaining of acute eye pain have irritated corneal nerves. You will provide significant temporary relief with a single drop of topical anesthetic. This will also provide you valuable time to complete your examination. One word of caution. Patients have been known to smuggle anesthetic for home use, and the medication is toxic to the corneal epithelium.

Apply fluorescein to the cornea and illuminate the surface with a cobalt blue light to highlight epithelial defects (abrasions, dendrites, exposure, etc.). Many providers have been trained to remove superficially embedded foreign bodies under a slit lamp. Remember, the thickness of the central cornea is only 500 micra. You may successfully

excavate the particle only to create a leaking perforation. Select these cases carefully. Rely on a small gauge (#23 or #25) needle on a 5cc syringe as your instrument when choosing to persevere. If you have any hesitation, patch and refer to the nearest ophthalmologist.

Another caution. Are you sure there is only **one** foreign body? Here is a lesson that cannot be overemphasized. Entry wounds in the periorbital skin, eyelids, conjunctiva or globe from small, high velocity particles are easily overlooked. Sterile intraocular media and intraorbital tissues are ideal culture material for contaminated, retained foreign bodies.

Immediate ophthalmological consultation is obligatory in some acute red eye situations: hyphema (blood inside the anterior chamber), intraocular foreign bodies, and any suspected or confirmed penetrating injury of the globe. An eye shield and prompt referral are recommended. These are the cases where expediency may directly affect final visual outcome. During transfer, the penetrated globe should receive no topical medications, especially ointments.

The majority of red eye cases satisfactorily recover in a few days. It is, however, impossible to predict those patients who will experience a stormy clinical course. Universal follow-up instructions should include discussion of four Ps: **P**ain that increases or is not relieved with aspirin or acetaminophen; **P**us; **P**ink progressive or persistent globe hyperemia; and, **P**oor vision. If the eye does not begin to feel better, look better, and see better, it's time for another exam.

Some final advice is warranted. Patients treasure vision, and they respond to eye problems differently. As a generalization, patients with ophthalmic disorders are concerned about the prospect of losing eyesight. The clinician often can foster compliance with a clear provision for timely follow-up, should the problem persist.

## THE ACUTE RED EYE PATIENT

### 10-Step Checklist

1. Always record the best corrected visual acuity.
2. Use simple descriptive terminology in the medical record.
3. Conjunctivitis is most commonly painless.
4. Is the patient wearing contact lenses?
5. Trauma may involve more than one foreign body.
6. Do not diagnose glaucoma without measuring the intraocular pressure.
7. If the eye needs steroids it needs an ophthalmologist.
8. Have the patient gaze at a distant target for a reliable pupil exam.
9. Never patch a suspected penetrating globe injury.
10. Remind the patient of the 4 P's.

## REFERENCE

1. Cullom RD, Chang B (eds.). The Wills Eye Manual Office and Emergency Room Diagnosis and Treatment of Eye Disease, 2nd Ed. Philadelphia, PA: J.B. Lippincott Co.; 1994.